

Thyroid disorders – Are you hypothyroid?

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Most of us are familiar with the common symptoms of thyroid disease such as fatigue, hair loss, dry skin and weight gain to name a few. But did you know that the thyroid is responsible for the speed of every cell and function in the body, not just our metabolism. This means the speed of the brain (thought processes), the speed of the heart (slow or fast heart rate), the speed of the gastrointestinal system (constipation), the speed of the liver (elevated cholesterol and poor detoxification), and even our skin cell regeneration (dry skin and poor scarring). Since thyroid hormone affects every cell in the body it also has symptoms that relate to almost every part in the body.

Listed below are some other symptoms of hypothyroidism you might not have known

Depression	Migraines	PMS	Infertility	Constipation	Slow heart rate
Panic attacks	Anxiety	Puffy face	Enlarged tongue	Slow speech	Low body temperature
Cold hands and feet	Decreased memory	Morning stiffness	Joint pain	Drooping eyelids	Elevated cholesterol
Insulin resistance	Carpal tunnel syndrome	Heart disease	Easy bruising	Painful periods	Fibrocystic breast disease
Loss of lateral 1/3 eyebrow	Increased appetite	ringing in the ears	Swollen hands and eyelids	Muscle cramps and pain	acne

The thyroid gland is one of the largest endocrine organs. It is a butterfly shaped organ located in the neck located just below the Adam's apple. It secretes a hormone called thyroxine or T4 that is made up of the amino acid tyrosine and four molecules of iodine – hence T4. The thyroid gland is a very sensitive dynamic organ. Its function can be altered or complicated by many factors, including: nutritional deficiencies, environmental toxicities, infectious causes, autoimmune and stress.

Since the thyroid is so sensitive to changes and we have changed many things over the last 30 years, including our testing, we are seeing a significant increase in the rate of hypothyroidism. We have fluoride in our toothpaste and water. Our food supply has increased bromide added. Our bread products used to contain iodine, but now they substituted bromide instead. Bromide and fluoride both compete with iodine in the thyroid which can lead to dysfunction. We have a lot of women on birth control for years without replacing the deficits that these drugs cause, reducing tyrosine, magnesium, and B vitamins; which are all necessary for proper thyroid function. The decrease in omega 3 fatty acids in the diet will reduce the T4-T3 conversion rate. A lot of our patients are reducing their salt intake and table salt is one of our main sources of iodine. Many women are iron deficient and the thyroid needs iron in every step of its production and activation. One of the significant changes in recent years is the increase in the stress levels of most patients. When we are heavily stressed out our bodies produce increased amounts of cortisol which will eventually send a feedback to your thyroid to slow down. The increased weight in our society also contributes to lower thyroid levels as increased adipose or fat cells will send a signal to the thyroid to slow down. These are just many examples of a few of the possible

explanations for the increase impact of thyroid disease in our society. Since thyroid is a hormone – like most hormones it will decline with age.

How do we know if you are hypothyroid? The most common test used to check they thyroid function is called a TSH, which stands for thyroid stimulating hormone. This test is checking for the level of hormone that is released by another gland called the pituitary. The pituitary is located in the brain and is the center of control for many hormones – the body uses it as the control center that tells you whether you need more or less of a given hormone. TSH is the hormone that tells your thyroid whether to produce more or less of T4. Therefore, when we measure TSH we are not measuring your actual thyroid hormone, but only whether our brain thinks we are making enough thyroid hormone. The total T4 level measures all of the T4 hormone, but only the free hormone not bound by any other protein is available to the body for use. T4 is the hormone produced by the thyroid but is not activated until the body takes one of the iodine molecules off and turns it into T3. T3 is also released from the thyroid gland but about 80% is derived in the peripheral tissues by the conversion of T4 to T3. T3 is the active form of thyroid hormone. This step can be altered and T4 can be converted to a different hormone called reverse T3 – this is the mirror image of T3 but when attached to the receptor on the cell it is inactive and does not work. This is why you can have normal thyroid numbers but still have significant hypothyroid symptoms, due to the fact that the hormone attached to the receptor is not able to work correctly. Excessive stress, obesity, steroids and other medications will increase the ratio of reverse T3 in the system, thereby increasing the inactive form.

The thyroid requires certain nutrients to work effectively. It needs iodine, tyrosine, iron, selenium, magnesium, B vitamins, and zinc to name some of the most important ones. Deficiencies in any of these nutrients can affect thyroid production or activation. It is important to look at every aspect of the thyroid in order to determine if a patient has an underactive thyroid.

Some questions I ask when evaluating a patient for hypothyroid are: Are they symptomatic? Are they producing enough hormones and if not why? Are they lacking key ingredients to make thyroid hormone? Are they nutritionally deficient and not converting their hormone correctly? Are they producing antibodies to their thyroid? Are they on medications that interfere with thyroid function? It is not as easy as measuring the TSH and seeing if it is in normal range.

To hear more about thyroid hormone and its functions come to Dr. Leonhardt's seminar on September 27th @ 630pm. Peaks of Health Metabolic Medical Center 7600 Bryan Dairy Rd Suite D. Largo

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